

Claims

1. An arrangement (1) of an electrical component (3) on a substrate (2), with at least one electrical insulating film (5) being present for the purpose of electrically insulating the component and at least one section (52) of the insulating film (5) being joined to the component (3) and the substrate (2) in such a way that a surface contour (11) formed by the component (3) and the substrate (2) is reproduced in a surface contour (51) of the section (52) of the insulating film (5),
characterized in that
at least the section of the insulating film (5) having the surface contour has a dielectric strength against an electrical field strength of at least 10 kV/mm.
2. The arrangement as claimed in claim 1, wherein the field strength is selected from the range from 10 kV/mm inclusive to 200 kV/mm inclusive.
3. The arrangement as claimed in claim 1 or 2, wherein the surface contour (11) formed by the component (3) and the substrate (2) has at least one geometric shape chosen from the group corner (33) and/or edge (34).
4. The arrangement as claimed in one of the claims 1 to 3, wherein at least the section (52) of the insulating film (5) having the surface contour (51) has a multi-layer structure (54) for the purpose of increasing the dielectric strength.
5. The arrangement as claimed in one of the claims 1 to 4, wherein at least the section (52) of the insulating film

- (5) having the surface contour (51) has an essentially constant film strength.
6. The arrangement as claimed in one of the claims 1 to 5, wherein at least the section (52) of the insulating film (5) having the surface contour (51) has a different film strength compared to a further section (53) of the insulating film (5).
 7. The arrangement as claimed in one of the claims 1 to 6, wherein at least the section (52) of the insulating film (5) having the surface contour (51) is preformed.
 8. The arrangement as claimed in one of the claims 1 to 7, wherein the insulating film (5) has at least one plastic selected from the group polyacrylate, polyimide, polyethylene, polyphenol, polyetheretherketon, polytetrafluorethylene and/or epoxy.
 9. The arrangement as claimed in one of the claims 1 to 8, wherein the insulating film (5) has a composite material containing the plastic and at least one filler material different from the plastic.
 10. The arrangement as claimed in claim 9, wherein the filler material is present in the form of a mesh.
 11. The arrangement as claimed in claim 9 or 10, wherein the filler material is thermally conductive.
 12. The arrangement as claimed in one of the claims 1 to 11, wherein the surface contour (11) formed by the component (3) and the substrate (2) has a height difference (12)

which is chosen from the range from 200 μm inclusive to 1000 μm inclusive.

13. The arrangement as claimed in one of the claims 1 to 12, wherein the component is a semiconductor component (32).
14. The arrangement as claimed in claim 13, wherein the semiconductor component is a power semiconductor component chosen from the group MOSFET, IGBT and/or bipolar transistor.
15. A method for producing an arrangement as claimed in one of the claims 1 to 14, comprising the method steps:
 - a) providing an arrangement of at least one electrical component on a substrate and
 - b) laminating the insulating film (5) onto the component (3) and the substrate (2) in such a way that the surface contour (11) formed by the component (3) and the substrate (2) is reproduced in the surface contour (51) of the insulating film (5).
16. The method as claimed in claim 15, wherein the lamination of the insulating film (5) is performed under vacuum.
17. The method as claimed in claim 15 or 16, wherein a tempering step is performed during and/or after the lamination of the insulating film (5).